REMARKS

This application has been carefully reviewed in light of the Office Action dated October 20, 2009. Claims 1, 3, 4, 7, 8, 10 and 11 are pending in the application. Claims 1 and 11 are the independent claims. Reconsideration and further examination are respectfully requested.

Claims 1, 3, 4, 8, 10 and 11 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 7,131,124 (Hanyu) and U.S. Publication No. 2002/0018665 (Muto).[1] Claim 7 was rejected under § 103(a) over Hanyu, Muto and U.S. Publication No. 2003/0093612 (Ootani). Reconsideration and withdrawal of these rejections are respectfully requested.

Independent Claims 1 and 11 generally concern data transfer between a first controller which controls an engine section for forming an image and a second controller which transmits image data to the first controller. The engine section includes a nonvolatile memory which is rewritten by rewrite data transmitted from the second controller. In an image forming mode, both a condition request instruction and condition information are transmitted via a data signal line in accordance with the signal level of a report signal line. In a rewrite mode, both a rewrite instruction and rewrite data are transmitted via the data signal line in accordance with the signal level of the report signal line.

Thus, according to the claims, there are two modes: an image forming mode and a rewrite mode. Moreover, the same data signal line and report signal line are utilized by both modes.

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[1]Page 2 of the Office Action includes canceled Claims 5 and 6 in the list of rejected claims. It is believed that this is merely a typographical error, as Claims 5 and 6 are not addressed in the body of the rejection.

By virtue of this arrangement, it is ordinarily possible to perform high-speed serial data communication for both image formation and memory rewriting in a simple system having two signal lines (e.g., the data signal line and report signal line).

According to one aspect of Claims 1 and 11, the second controller is notified that the first controller is not ready for reception of a rewrite instruction or rewrite data by changing a signal level of a report signal line from a first level to a second level. For one non-limiting example embodiment, see Figure 8.

According to other aspects of Claims 1 and 11, rewriting is performed while the first controller is not ready for reception of the rewrite instruction or the rewrite data, and the signal level of the report signal line is returned to the first level when the first controller is prepared for the reception of the rewrite instruction or rewrite data. For one non-limiting example embodiment, see Figure 8.

Referring specifically to claim language, independent Claim 1 is directed to a data transfer method between a first controller which controls an engine section for forming an image and a second controller which transmits image data to the first controller. The engine section includes a nonvolatile memory. In an image forming operation mode of forming an image with the engine section, the method includes notifying the second controller of a condition change of the engine section by the first controller by changing a signal level of a report signal line from a first level to a second level, transmitting a condition request instruction by the second controller to the first controller via a data signal line while the signal level of the report signal line is at the second level, and transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level of the report signal line is returned to the first level. In a rewrite mode of rewriting the

nonvolatile memory, the method includes transmitting a rewrite instruction by the second controller to the first controller via the data signal line while the signal level of the report signal line is at the first level, transmitting rewrite data by the second controller to the first controller via the data signal line in response to the rewrite instruction while the signal level of the report signal line is at the first level, notifying the second controller that the first controller is not ready for reception of the rewrite instruction or the rewrite data by changing the signal level of the report signal line from the first level to the second level, and rewriting the nonvolatile memory of the engine section by the first controller by the rewrite data transmitted from the second controller. The rewriting is performed while the first controller is not ready for reception of the rewrite instruction or the rewrite data, and the signal level of the report signal line is returned to the first level when the first controller is prepared for the reception of the rewrite instruction or the rewrite data.

Independent Claim 11 is directed to an apparatus substantially in accordance with the method of Claim 1.

The applied art is not seen to disclose or suggest the features of Claims 1 and 11, and in particular is not seen to disclose or suggest at least the features of (i) notifying a second controller that a first controller is not ready for reception of a rewrite instruction or rewrite data by changing a signal level of a report signal line from a first level to a second level, (ii) rewriting a nonvolatile memory while the first controller is not ready for reception of the rewrite instruction or the rewrite data, and (iii) returning the signal level of the report signal line to the first level when the first controller is prepared for the reception of the rewrite instruction or the rewrite data.

Pages 4 and 5 of the Office Action concede that Hanyu does not disclose transmitting an instruction by the second controller to the first controller while the signal level is at the first level, transmitting data by the second controller to the first controller via the data signal line after the signal level is changed to the first level, and rewriting the nonvolatile memory by the first controller after the signal level is changed from the first level to the second level. Applicant agrees, and submits that it logically follows that Hanyu also does not disclose (i) notifying a second controller that a first controller is not ready for reception of a rewrite instruction or rewrite data by changing a signal level of a report signal line from a first level to a second level, (ii) rewriting a nonvolatile memory while the first controller is not ready for reception of the rewrite instruction or the rewrite data, and (iii) returning the signal level of the report signal line to the first level when the first controller is prepared for the reception of the rewrite instruction or the rewrite data.

Nevertheless, the Office Action relies on Muto for the features missing from Hanyu. As understood by Applicant, Muto is directed to printing pages to a different discharge exit if the capacity of a designated discharge exit is exceeded. See Muto, Abstract.

Pages 5 and 6 of the Office Action assert that Muto (paragraphs [0065], [0068], [0071] and [0073]) discloses transmitting an instruction by a second controller to a first controller while a signal level is at the first level, transmitting data by the second controller to the first controller after the signal level is changed to the first level, and rewriting a nonvolatile memory by the first controller after the signal level is changed from the first level to the second level.

However, the cited portions of Muto simply disclose using a /CBSY signal to synchronize commands from a printer controller to an engine controller and status responses

from the engine controller, along with various other signals such as a clock signal and a print request signal. See Muto, paragraphs [0065], [0068], [0071] and [0073]. In that regard, Muto's signals are used for image formation, and not to synchronize a rewrite of a memory.

Accordingly, the cited portions of Muto are not seen to disclose or suggest using a single report signal line as an indicator of whether an engine section is prepared for a rewrite, much less (i) notifying a second controller that a first controller is not ready for reception of a rewrite instruction or rewrite data by changing a signal level of a report signal line from a first level to a second level, (ii) rewriting a nonvolatile memory while the first controller is not ready for reception of the rewrite instruction or the rewrite data, and (iii) returning the signal level of the report signal line to the first level when the first controller is prepared for the reception of the rewrite instruction or the rewrite data.

Ootani has been reviewed and is not seen to remedy the deficiencies of Hanyu and Muto.

Since the applied art is not seen to disclose or suggest the features of Claims 1 and 11, the applied art is also not seen to disclose or suggest the attendant benefits of such an arrangement, including utilizing the same data signal line and report signal line for both an image forming mode and a rewrite mode. As a consequence, the applied art is also not seen to disclose or suggest a performing serial data communication for both image formation and memory rewriting with two signal lines.

Therefore, independent Claims 1 and 11 are believed to be in condition for allowance, and such action is respectfully requested.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons.

Because each dependent claim is deemed to define an additional aspect of the claims, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, the entire application is believed to be in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

/Michael J. Guzniczak/
Michael J. Guzniczak
Attorney for Applicant
Registration No.: 59,820

FITZPATRICK, CELLA, HARPER & SCINTO
1290 Avenue of the Americas
New York, New York 10104-3800
Facsimile: (212) 218-2200

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